

AGENDA
CLALLAM COUNTY SOLID WASTE ADVISORY COMMITTEE
Clallam County Courthouse, Room 160
223 East 4th St Port Angeles, WA
October 26, 2022 – 3:00 p.m.

****ATTENTION****

Clallam County Solid Waste Advisory Committee meetings will also be available virtually at:

If you would like to participate in the meeting via Zoom audio only, call 253-215-8782 and use meeting ID: 938 0529 7962 and passcode: 12345

If you would like to participate in the meeting via Zoom video conference, visit <https://zoom.us/join> and use Meeting ID: 938 0529 7962 and passcode: 12345

This meeting can be viewed on a live stream at this link: <http://www.clallam.net/features/meetings.html>

Public comment and questions can be directed to County Public Works-Roads at 360-417-2290 or sgray@co.clallam.wa.us

A. WELCOME/CALL TO ORDER/ROLL CALL

B. REQUEST OF MODIFICATIONS/ADDTIONS TO AGENDA

C. PUBLIC COMMENT – Please limit comments to three minutes

D. APPROVAL OF PREVIOUS MEETING MINUTE(S): September 28, 2022

E. REPORTS AND PRESENTATIONS

F. CONTINUING MATTERS

1. Continued discussion on 2022 Organics Management Law with focus on local government provisions and requirements.

G. NEW BUSINESS ITEMS

1. Overview of 2022 Organics Management Law provisions related to requirements for local government requirements for compost procurement ordinance adoption and reporting.
2. City of Sequim Solid Waste and Recycling Study

H. NEXT-MEETING/FUTURE AGENDA ITEMS DISCUSSION – Confirm next meeting date of December 28, 2022 and targeted discussion items.

I. PUBLIC COMMENT – Please limit comments to three minutes

J. ADJOURNMENT

AGENDA ITEM

Continued discussion on
2022 Organics Management
Law with focus on local
government provisions and
requirements.

2022 Organics Management Law

In 2022, Washington's Legislature passed [House Bill 1799 \(HB 1799\)](#) requiring diversion of organic materials away from landfill disposal and towards food rescue programs and organics management facilities.

These actions will help Washington achieve its 2030 goal to cut landfill-disposed organic material by 75%, compared to 2015. By 2025, the amount of edible food wasted in landfill disposal must be reduced by 20%. That's about 78,000 tons of good food rescued for human consumption. Other organic materials will be processed at composting facilities, anaerobic digesters, and used for vermiculture and emerging technologies.

I want to...

- [Read HB 1799: Organic materials management](#)

Diverting organics from the landfill

Washington's new organics management law requires state and local governments, businesses, and other organizations to reduce the amount of organic materials disposed in landfills and increase the demand for processed organic materials like compost. The legislation also calls for an increase in edible food recovery and amends many laws affecting organics management.

The following summary is not inclusive of all parts, dates, or requirements of HB 1799.

Local government solid waste funding study

Section 104: This section requires us to contract a third-party consultant to study the adequacy of funding for local government solid waste management. The study will assess a variety of local government funding issues, including those related to policy proposals introduced or passed since 2019. When scoping the study and reviewing the findings and recommendations, the law instructs us to work with the Washington Association of County Solid Waste Managers, the Association of Washington Cities, Washington Refuse and Recycling Association, and other stakeholders. The completion date is **July 1, 2023**.

Requirements for organics management by businesses

Section 201: This section establishes a phased approach to collect source-separated organics from businesses. By **July 1, 2023**, we must determine which counties and cities with solid waste management plans already offer organics collection to businesses and whether or not their organics management facilities have the capacity to accept more material. The report generated will be updated annually and help local jurisdictions determine if they are required to offer organics collection service to businesses. While some exemptions will apply, beginning **Jan. 1, 2024**, businesses must arrange for organics collection that follows a phased-in approach.

Washington Center for Sustainable Food Management (Food Center)

Section 402: We will establish the Food Center by **Jan. 1, 2024**, to help coordinate statewide food waste reduction. Recommended by the [Use food Well Washington Plan](#), the Food Center will work to meet statewide food waste and recovery goals.

Voluntary food donation tracking

Sections 403 and 404: We must coordinate with the Washington Department of Agriculture to establish compatible and voluntary reporting protocols to track food donations, which support the goals of the Food Center.

Model ordinances to discourage organic material disposal in landfills

Section 405: By **Jan. 1, 2025**, we must develop model ordinances that address solid waste collection and disposal. The ordinances must provide disincentives for disposing organic materials in landfills and be created under the provisions of chapter [43.21C RCW](#), State environmental policy. Jurisdictions that choose to adopt a model ordinance will not be required to review the ordinance further under chapter 43.21C RCW.

County comprehensive and local jurisdiction solid waste management planning

Sections 103, 601, 602, 603: After **July 1, 2024**, new and updated local comprehensive solid waste management plans must address the new requirement to provide organic materials collection and management to residential and nonresidential customers. This includes identifying priority areas to locate new organic management facilities. After **Jan. 1, 2027**, new and updated comprehensive plans must be consistent with requirements of Section 102.

After **Jan. 1, 2025**, county comprehensive plans must allow siting of organics management facilities to provide necessary capacity for organics collection.

Compost procurement ordinances

Part 7 updates chapter [43.19A RCW](#) use of compost products in public projects and requires a reporting system to document compost purchases. By **Jan. 1, 2023**, cities and counties must adopt compost procurement ordinances. This section applies to a city or county with a population greater than 25,000, as measured by Washington's Office of Financial Management; and to each city or county in which organic material collection services are provided under chapter [70A.205 RCW](#). Beginning **Dec. 31, 2024**, jurisdictions must report to Ecology total tons of organic matter they diverted from the landfill, including the amount of compost purchased from specific sources.

Degradable products labeling requirements

Part 8 amends several sections in chapter [70A.455 RCW](#), Plastic product degradability. Beginning **Jan. 1, 2024**, producers of products sold in Washington and labeled as compostable, including bags, film products, and food service products, must submit a declaration of compliance. Compliance includes using appropriate labels and colors on compostable products.

All cities and counties in Washington, as well as Ecology, have the authority to investigate complaints and enforce violations. We must develop a forum for complaints and will collaborate with cities and counties to provide technical assistance to retailers, consumers, and producers. We must begin enforcing this law by **July 1, 2024**.

Rulemaking

This law authorizes us to write rules to implement sections 102, 201, 402, and 810; however, at this time we do not believe rules will be required for implementation.

If by 2030 the state organics management goals identified in HB 1799 are not achieved, we may adopt rules necessary to meet those goals.

Related links

Use Food Well Washington Plan
Organic waste

Contact information

Chery Sullivan
Policy section manager
chery.sullivan@ecy.wa.gov
360-485-2724

Organics Management Funding Opportunities
for Washington local governments and communities including new opportunities
included in the 2022 Organics Management (OM) Law – ES2HB 1799
October 2022

- **Local Solid Waste Financial Assistance** provides funding to local governments in Washington for solid waste planning, implementation of eligible activity identified in those plans, and for the enforcement of solid waste rules and regulations. Pages 70-71 of the [current LSWFA guidelines](#) outlines proposed activity that is reviewed for eligibility on a case-by-case basis for an Organics task. These include capital expenditures for new construction, facility improvements, and site acquisition. Next funding cycle will begin in the 2023-25 biennium. An overview of the program and regional contacts can be found here - [Local Solid Waste Financial Assistance - Washington State Department of Ecology](#).
- **Public Works Trust Fund** - [Public Works Board - Public Works Financing \(wa.gov\)](#) – The passage of 1799 revised the RCW that established the fund to identify “composting and other organics management facilities” as eligible projects. Applications closed on Sept. 9, 2022. However, new rounds of funding might open up depending on the number and qualifications of applicants. Contact Mark Rentfrow to learn more about the fund and to get on their email list for updates. mark.rentfrow@commerce.wa.gov, (360) 529-6432.
- **EPA Funding to Tribal, State and Local Governments through Federal Infrastructure Law Funding** - There will be a total of **\$275 million or \$55 million a year from FY22-26** for infrastructure and recycling grants and **\$75 million total or \$15 million a year for Reduce, Reuse, Recycle Education and Outreach Grants**. Food waste is one focus, and there will be other funding streams for developing battery collection best practices and battery labeling guidelines. Contact Domenic Calabro calabro.domenic@epa.go - [More details in these slides presented by EPA to the State SWAC](#) on March 23. *Funding info starts on slide 7.* Information about all of EPA’s funding opportunities related to the food system can be found here - [Funding Opportunities and EPA Programs Related to the Food System | US EPA](#).
- **USDA Recycling Infrastructure Funding – Composting and Food Waste Reduction** [Urban Agriculture Grants and Engagement Opportunities | Farmers.gov](#) – More details are in this [BOX folder](#) and in [this presentation](#). . Applications may have closed for 2022 – but could be a possible source of future funding. Contact - Jean Buzby, USDA Food Loss and Waste Liaison UrbanAgriculture@usda.gov.
- **Other OM funding related resources**
Reimbursement to farmers to purchase and use compost - [RCW 15.04.420](#) is a new statute established under 1799 that requires WSDA to set up a program to reimburse farmers for the cost of purchasing and using compost by 7-1-2023. More details to come.

Grants to farmers to purchase equipment to increase use of compost - [RCW 89.08.615](#) has now been revised under 1799 to provide grant funding through the Sustainable Farms and Fields Program to farmers for equipment and other support to increase the use of compost and anaerobic digestate and to study the reduction in GHG emissions by using crop residues to produce biofuel. You can learn more here - [Sustainable Farms and Fields \(wa.gov\)](#)

AGENDA ITEM

Overview of 2022 Organics
Management Law provisions related
to requirements for local
government requirements for
compost procurement ordinance
adoption and reporting.



2022 Organics Management Law

Focus on Compost Procurement Ordinances and Reporting

Overview

Methane is a greenhouse gas that is, over 20 years, at least 75 times more potent than carbon dioxide. The primary goal of the [2022 Organics Management Law](#)¹ is to reduce the emissions of methane created when organic materials, like food and yard waste, decompose in a landfill. To achieve this goal, the bill established milestones, based on 2015 disposal levels, which require actions by state and local agencies, residents, and businesses to:

- Rescue 20% of previously disposed edible food for human consumption by 2025.
- Divert 75% of previously disposed organic materials from landfills by 2025.

The purpose of the compost procurement provisions now codified in [RCW 43.19A.150](#)² is to strengthen markets for the anticipated large amounts of additional compost that will be produced as organics collection programs expand. Other statutes established or amended for this purpose include RCW 43.19A.160 and RCW 39.30.040.

Specifically, these statutes require cities and counties that meet certain criteria to adopt **compost procurement ordinances (CPO)** and to report their compost purchases to Ecology.

What follows are answers to key questions about how these new provisions affect local governments:

Which local governments are required to adopt a CPO and to submit compost procurement activity reports to Ecology?

- Counties and incorporated cities with a **population of more than 25,000**, based on the latest Office of Financial Management data, are required to adopt a CPO and submit compost procurement activity reports to Ecology.
- Jurisdictions with a **population of fewer than 25,000 in which curbside organics collection services are provided** are also required to adopt a CPO and submit compost procurement activity reports to Ecology. These jurisdictions include:
 - Counties with a population of 25,000 or fewer in which curbside organics collection services are provided, including services provided in unincorporated or incorporated parts of the county.
 - Incorporated cities or towns with a population of 25,000 or fewer in which curbside organics collection services are provided.

What is the deadline for adopting a CPO? By Jan. 1, 2023.

¹ <https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Waste-reduction-programs/Organic-materials/2022-organics-management-law>

² <https://app.leg.wa.gov/RCW/default.aspx?cite=43.19A.150>

What options do jurisdictions have for meeting the CPO adoption and reporting requirements?

1. A county, city, or town can adopt its own CPO and submit its own compost procurement report to Ecology.
2. Counties, cities, or towns with existing recycled product procurement ordinances can amend them to include compost.
3. Cities can sign onto a county CPO and have the county submit procurement reports that include city purchases. This could be done through a separate interlocal agreement or by amending the county's solid waste management plan to include a CPO. The amendment would then cover these requirements for all signatories to the plan.
4. Two or more cities or towns can sign joint CPOs and submit joint procurement reports.
5. Two or more counties can sign joint CPOs and submit joint procurement reports.

What should a CPO address?

A CPO is intended to implement [RCW 43.19A.120: Use of compost products in projects](https://app.leg.wa.gov/RCW/default.aspx?cite=43.19A.120)³. This statute states that when “planning government-funded projects or soliciting and reviewing bids for such projects, all state agencies and local governments shall consider whether compost products can be utilized in the project.” If it is determined that compost products can be used, then they must be used unless certain exceptions related to cost, availability, and quality apply.

Other relevant statutes to review in preparing a CPO include:

- RCW 43.19A.110, which requires counties and cities to adopt specifications for compost products to be used in road projects.
- RCW 43.19A.130, which encourages local governments to purchase compost from the compost facility that serves its residents.

When are compost procurement activity reports due?

The first report is due by Dec. 31, 2024, and by December 31 in every subsequent even-numbered year – 2024, 2026, 2028, 2030 and so on.

What needs to be included in a compost procurement activity report?

Compost procurement activity reports need to include the following:

- The total tons of organic material diverted each year.
- The volume and cost of compost purchased each year.
- The source(s) of the compost.

How will compost procurement reports be submitted and tracked?

Ecology is developing an online system for local governments to submit their compost procurement activity reports. The first reports are due at the end of 2024, and we expect the reporting portal to be open by July 1, 2024.

Are there other related requirements in the new law?

Yes. Any county or city that adopts a CPO must “develop strategies to inform residents about the value of compost and how the jurisdiction uses compost in its operations.” These strategies will need to be included in the local solid waste management plan the jurisdiction participates in when that plan is amended or updated. Information on the value of compost and making and using compost can be found on [Ecology's compost web page](#)⁴.

Where can I find out more?

Ecology is gathering procurement resources including CPO templates and examples to help local governments get started on their ordinances and [posting them on the Box platform](#)⁵. These materials include environmentally preferred purchasing resources prepared by Ecology and the Department of Enterprise Services.

Additional resources related to the new law can be found in our [resource library on the Box platform](#)⁶.

For more information

Subscribe to our [email news](#)⁷ to stay up to date on the latest organics material management news. After submitting your email, first choose the **Solid Waste Program**, and then **Organic Materials** to get the latest information.



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To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-6381 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877- 833-6341.

³<https://app.leg.wa.gov/RCW/default.aspx?cite=43.19A.120>

⁴ <https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Waste-reduction-programs/Organic-materials/Managing-organics-compost>

⁵<https://app.box.com/s/wie5wjflcm9imusecihstqb5s1mujm2l>

⁶<https://app.box.com/s/r7shmywl2t798nu43f1udkp1481bcx6y>

⁷<https://public.govdelivery.com/accounts/WAECY/subscriber/new?sp=ecology>

MODEL COMPOST PROCUREMENT ORDINANCE

for

Thurston County, WA

AN ORDINANCE establishing a compost procurement policy in Thurston County.

WHEREAS, in March 2022, ESSHB 1799 was signed into Washington law. The primary goal of the law is to increase the diversion of organic materials going to landfills in order to reduce methane emissions—landfills are a significant source of methane emissions; and

WHEREAS, as more organic materials are diverted and recycled, it is critical the compost manufactured be procured by local jurisdictions and others to support the economic viability of these processes and programs. It is well established compost production and use provide significant environmental benefits to our soil and food. ESSHB 1799 encourages most cities and counties in Washington adopt a compost procurement ordinance by January 1, 2023.

The Thurston Board of County Commissioners do ordain as follows:

Section 1. Definition. A "Finished Compost Product" means a product created with "composted material" as defined in RCW 70A.205.015(3). Finished Compost Products include, but are not limited to, 100% finished compost or blends that include compost as a primary ingredient. Mulch is considered a Finished Compost Product if it contains a minimum of sixty percent composted material. Bark is not a Finished Compost Product.

Section 2. General Policy. Thurston County shall purchase finished compost products for use in public projects in which compost is an appropriate material in county projects or on county land, provided it is not cost prohibitive to acquire. Cost prohibitive is defined as a product purchasing cost that exceeds 10% of the cost of another product that would serve the same purpose. Thurston County is not required to use compost products if:

- (i) Compost products are not available within a reasonable period of time;
- (ii) Compost products that are available do not comply with existing purchasing standards; and
- (iii) Available compost products do not comply with federal or state health, quality, or safety standards.

Pursuant to RCW 43.19A.130, Thurston County will strive to purchase an amount of finished compost products equal or greater than fifty percent of the amount of organic materials delivered to the compost processor.

Section 3. Local Purchasing. Thurston County will purchase finished compost products from companies producing compost locally, are certified by a nationally recognized organization, such as the US Composting Council, and produce finished compost products derived from municipal solid waste compost programs while meeting quality standards adopted by the Department of Transportation or adopted by rule by the Department of Ecology. If locally produced compost is not available, compost shall be sourced from outside the region, with preference given to products sourced as close as possible to Thurston County. Proof that locally produced compost was not available at the time of purchase or was cost-prohibitive shall be documented.

Section 4. Planning. In order to meet the general policy, Thurston County shall plan for compost use in the following categories:

- (a) Landscaping projects;
- (b) Construction and postconstruction soil amendments;
- (c) Applications to prevent erosion, filter stormwater runoff, promote vegetative growth, or improve the stability and longevity of roadways; and
- (d) Low-impact development of green infrastructure to filter pollutants or to keep water onsite, or both.

This plan will be re-assessed each December 31st of even-numbered years, beginning in 2024 and thereafter as part of the reporting obligations in Section 6.

Section 5. Education. Thurston County shall conduct educational outreach to inform residents about the value of compost and how the jurisdiction uses compost in its operations each year.

Section 6. Reporting¹. By December 31, 2024, and each December 31st of even-numbered years thereafter, Thurston County shall report the following information to the Department of Ecology:

- (a) Total tons of organic material diverted each year;
- (b) The volume and cost of composted material¹ purchased each year; and
- (c) The source(s) of the finished compost product purchased.

¹ For compost use tracking and reporting, only the volume of composted material is reported, based on the percentage of compost material in a finished compost product. For example, a typical bioretention soil blend is 40% compost and 60% sand. If a jurisdiction bought 10 cubic yards of bioretention soil, they would report 4 cubic yards of composted material usage.

SECTION 7. SEVERABILITY. If any section, subsection, sentence, clause, phrase or other portion of this Ordinance or its application to any person is, for any reason, declared invalid, illegal or unconstitutional in whole or in part by any court or agency of competent jurisdiction, said decision shall not affect the validity of the remaining portions hereof.

SECTION 8. EFFECTIVE DATE. This Ordinance shall take effect *immediately upon adoption.*

SECTION 9. CORRECTIONS. Upon approval of the Prosecuting Attorney's Office, the Clerk of the Board is authorized to make any necessary corrections to any section, subsection, sentence, clause, phrase or other portion of this Ordinance for scrivener's or clerical errors, references, ordinance numbering, section/subsection numbers, and any reference thereto.

Policy References

[E2SHB 1799](#), Organic Materials Procurement

[RCW 43.19A.120](#), Use of compost products in projects

[RCW 43.19A.130](#), Local governments are encouraged to enter compost product purchasing agreements

AGENDA ITEM

City of Sequim Solid Waste
and Recycling Study

SEQUIM CITY COUNCIL AGENDA COVER SHEET

FROM: Meggan Uecker, Resource Analyst Initials MU
Ann Soule, Resource Advisor Initials ACS

SUBJECT/ISSUE: Sequim-Specific Solid Waste Study

Discussion dates				
CATEGORY	☐ City Manager Report ☐ Public Hearing ☐ Other Business	☒ Information Only ☐ Consent Agenda	Time Needed for Presentation 10 Min for Q&A	
Reviewed by			Initials	Date
Sarah VanAusdle, Public Works Director			SCV	10.17.22
Kristina Nelson-Gross, City Attorney			KNG	10.18.22
Matthew Huish, City Manager			MBH	10-20-22
Erika Hamerquist, Paralegal			ELH	10/19/22

The City hired HDR Engineering, Inc. to prepare a Solid Waste and Recycling Study Report (2022 CIP SDW-086PL) summarizing concerns and opportunities of the City's solid waste management agreements and practices, given an approaching deadline to extend or leave an interlocal agreement (ILA) with Clallam County and City of Port Angeles. This scope of work was developed into two products: a Solid Waste Contract Review Memo and a Materials Management Technical Memorandum.

Page 1 of 2

ATTACHMENTS

1. [Final Materials Management Technical Memorandum PDF](#)
2. [Presentation by HDR, Inc. on the Technical Memorandum](#)
3. [Slides from staff offering background on this topic](#)

DISCUSSION/ANALYSIS

Attachment 1 is the Final Materials Management memo and Attachment 2 is HDR's video presentation of both memos. City staff has also linked informational slides for background to assist the discussion and Q&A on 10/24.

The information developed in the Contract Review Memo is of ongoing benefit to staff during annual contract negotiations and participation in the ILA.

The information in the Materials Management Technical Memo is useful to guide regional and City priorities in solid waste management. The City needs to consider options for future programs and projects, including those presented in this memo.

Note that the City is a voting member of the Clallam County Solid Waste Advisory Committee (SWAC), whose role is to assist in the development of programs and policies concerning solid waste handling and disposal and review and comment on proposed rules, policies, or ordinances before adoption by the legislative and administrative body of the county or city. SWAC representatives are usually elected officials with a staff alternate. (As of October 10th Tom Ferrell is our Representative and Meggan Uecker is our Alternate.)

The SWAC is now implementing the 2021 Solid Waste Management Plan; City staff intends to share an informational presentation on our study at the October 26, 2022, SWAC meeting.

FINANCIAL IMPLICATIONS

The City has a responsibility to manage solid waste contracts and activities on behalf of rate payers. Taking action on options presented in the study may or may not have new financial implications, depending on the amount of staff time or further study/analysis involved. Implementation costs for various options are roughly estimated in the Summary (section 6) of the memo, and potential grant opportunities are indicated.

RECOMMENDATION

Staff requests input and direction from Council on solid waste management options presented in the memo and during Q&A with our consultant tonight. Staff would be glad to return with specific recommendations following further discussion and dialogue. Of course, inquiries or recommendations can also be sent to SWAC anytime via our City representatives.

MOTION

N/A



Final Materials Management Technical Memorandum

City of Sequim, Washington

September 29, 2022



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Acronyms and Abbreviations

AD	Anaerobic Digestion
ASP	Aerated Static Pile
C&D	Construction and Demolition Debris
City	City of Sequim, Washington
CSWMP	2021 Clallam County Comprehensive Solid Waste Management Plan
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
EPR	Extended Producer Responsibility
HB	Washington State Legislative House Bill
HHW	Household Hazardous Waste
HDPE	High-density Polyethylene
HDR	HDR Engineering, Inc.
ILA	Interlocal Agreement
LSWFA	Department of Ecology Local Solid Waste Financial Assistance
MBT	Mechanical Biological Treatment
MRC	Mattress Recycling Council
MRF	Materials Recovery Facility
MRWMD	Monterey Regional Waste Management District
MSW	Municipal Solid Waste
OCC	Old, Corrugated Cardboard
PET	Polyethylene Terephthalate
RCW	Revised Code of Washington



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Section 1 Introduction and Background

This section provides introductory and background information related to materials management, including solid waste and recyclables, in the City of Sequim, Washington.

1.1 Introduction

The City of Sequim (City) requested proposals to conduct a Solid Waste and Recycling Study to evaluate options for collection and post-collection of municipal solid waste (MSW) and recyclables over a 20-year planning horizon. The City, in partnership with Clallam County and the City of Port Angeles, Washington, recently completed the 2021 Clallam County Comprehensive Solid Waste Management Plan (CSWMP), which provides recommendations for implementation regarding future programs and facilities and aligns with Washington State priorities for waste reduction, recycling, diversion, and disposal. Recommendations from the CSWMP were considered in the preparation of this document.

HDR Engineering, Inc. (HDR), was retained to document and research innovative and successful recycling and materials management practices or initiatives that could be implemented in the City as they relate to recycling acceptance, handling, marketing, and end use of materials including the infrastructure necessary for implementation. In addition, opportunities for infrastructure will be considered, including siting of a transfer station or materials management facility on City-owned property.

1.2 Background

The following provides background information on current materials management practices locally and in the region.

1.2.1 Interlocal Agreement

In February 2007, the City, Clallam County, and the City of Port Angeles entered into an Interlocal Agreement (ILA) to provide competitively priced regional solid waste export and transfer system facilities and services. The ILA remains in force for 20 years, assumed through February 2027.

As a party to the ILA, the City is responsible, as follows, to:

- Direct solid waste collected within the City to the Regional Solid Waste Export and Transfer System facilities consistent with the most recent Clallam County CSWMP.
- Appoint representatives to the Joint Solid Waste Advisory Board.
- Encourage recycling efforts to the maximum extent possible for yard debris, special wastes, and construction and demolition (C&D) debris programs to minimize the amounts of material for waste export.

The City of Port Angeles currently acts as the custodian of an enterprise fund created under the ILA for the Regional Solid Waste Export and Transfer System. As such, the City of Port Angeles

sets the rates for disposal at all solid waste facilities in the system. The ILA specifically outlines how fees and charges are to be determined during the length of the agreement. Fees and charges are to be fair, reasonable, and equitable and applied equally to all ILA participants, with fees determined by cost of service based on waste type, facility receiving the waste, and type of hauler. The Joint Solid Waste Advisory Board makes recommendations to the Port Angeles City Council as costs, fees, and charges are considered.

Clallam County acts as the planning authority for development and implementation of the joint City-County CSWMP pursuant to the Revised Code of Washington (RCW) Chapters 35.21, 36.58, and 70A.205. The 2021 Clallam County CSWMP makes the following recommendations:

R&A1) Clallam County, Port Angeles, and Sequim must continue to meet their respective commitments as specified in the ILA.

R&A3) ILA signatories will prioritize essential services.

R&A4) The signatories to the ILA for the regional system will investigate creating a solid waste disposal district.

R&A5) Appropriate measures will be taken by the signatories to the ILA for the regional system to ensure sufficient funding.

Curbside recyclables collected in the City are not addressed in the ILA and are currently consolidated at a privately owned and operated facility. Yard waste collected within the City is currently delivered to the City of Port Angeles Compost Facility, and the Clallam County CSWMP makes the following recommendations:

O2) Continue curbside collection, processing, and composting yard waste at the Port Angeles Compost Facility and increase the amount of materials processed to the extent of the facility's capacity.

O5) Investigate economical and efficient options for handling residential, commercial, and institutional food waste.

1.2.2 City Contract for Solid Waste Collection and Disposal

In June 2002, the City entered into a contract with Waste Management for solid waste and recycling collection, and disposal services. The contract was reassigned to Waste Connections, with the original term of the contract to expire in June 2007. Three subsequent amendments extended this contract to December 2019 and reassigned the contract to Waste Connections dba Murrey's Disposal, also known as Olympic Disposal. The City determined that renegotiating the contract with the current provider, Murrey's Disposal, was in the best interests of the City, and a final contract was presented to the City Council for adoption that went into effect on January 1, 2020. The contract expires on January 1, 2030, with an additional 5-year extension available and provides Murrey's Disposal with an exclusive right to all solid waste generated within the City limits, both residential and commercial.

City Municipal Code Section 8.08 - Solid Waste Collections provides for mandatory solid waste curbside collection for all residences and businesses located within the City limits. While curbside recycling collection is not mandatory, the monthly curbside collection rate established through the Murrey's Disposal contract includes recycling. Currently, residents and businesses must request a recycling cart in order to participate. Collection of yard waste is non-mandatory and has a separate collection rate assessed for participants who subscribe to the service.

Curbside recyclables include:

- Aluminum (cans, trays, pie tins, foil, and clean food containers)
- Corrugated cardboard
- Mixed paper (mixed paper, colored paper, magazines, phone books, catalogues, advertisements)
- Plastic containers (polyethylene terephthalate [PET] #1 and high-density polyethylene [HDPE] #2 only)
- Tin cans (clean)

Glass is not collected curbside and is instead picked up by Murrey's Disposal at two community drop-off containers located in the City.

Murrey's Disposal bales all collected curbside recyclables and transports them for processing to Pioneer Recycling in Tacoma and other processing facilities, depending on current markets. Glass is shipped directly to market based on lowest cost for processing and end use. Yard waste is hauled directly to the City of Port Angeles Compost Facility.



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Section 2 Waste Diversion and Recyclables Management

The following section presents recyclables practices and initiatives for consideration and potential implementation within the City or with regional partners in alignment with state priorities for overall waste reduction and recycling. Washington Administrative Code 173-345-030 defines “Recyclable materials” as those solid wastes that are separated for recycling or reused, including but not limited to papers, metals, and glass, and that are identified as recyclable materials pursuant to a local solid waste management plan.

2.1 Glass

In 2022, the City of Port Angeles discontinued the acceptance of glass for recycling at the Blue Mountain and Regional Transfer Stations, and two additional drop-box locations within the City of Port Angeles. A timeline for reinstatement of glass recycling service at these locations is unclarified as of summer 2022.

Glass is not currently accepted in the curbside recycling program within the City. There are currently the following two drop-box sites within the City limits where residents can take glass:

- Corner of South 2nd Avenue and Hemlock (outside the City Shop yard)
- 703 East Washington Street (Evergreen Collision)

Murrey’s Disposal currently takes all glass collected from the drop-box sites to Concrete Recyclers in Tumwater, Washington, where the material is crushed for use as a substitute for sand and gravel backfill, landscaping, and foundation projects.

The following sections describe glass recycling and reuse practices and initiatives that the City could consider for future material management.

2.1.1 Specialty Glass

There are many uses for glass cullet (the industry term for crushed, furnace-ready, recyclable glass), including making specialty glass. Specialty glass includes decorative landscaping rocks, terrazzo floor tiles, countertop glass, aquarium chips, fire pit glass, swimming pool accents, and many other uses.¹

Glass is a prime decorative material because its colors are vibrant and never fade, as glass is not affected by sunlight ultraviolet rays. Many local artisan shops or contractors could use recovered glass cullet in their products or designs. For the best quality, recycled glass may need to be collected as color-separated or be processed through an optical sorter and potentially cleaned for specialty uses.

¹ Strategic Materials, Inc. “Specialty Glass.” [Specialty Glass | Recycled Glass Leader | Strategic Materials | Glass Recycling](#) (accessed March 2021).

2.1.2 Pozzolan in Portland Cement Concrete

It has been scientifically proven that when glass is finely size-reduced into a powder form, it possesses pozzolanic properties. A pozzolan is defined as a class of siliceous and/or aluminous materials that chemically react with calcium hydroxide when finely ground and in the presence of water to form cementitious properties. Due to this phenomenon, there is the potential for glass, or recycled glass cullet, to act as a pozzolanic material and be used as supplementary cementitious material to partially replace portland cement in concrete manufacturing. Some studies have shown that glass powder could replace up to 30 percent of cement (by weight) in standard concrete without causing detrimental effects while still achieving the durability and strength requirements.² Additionally, studies have found that using glass instead of cement reduces global warming and energy demands. Portland cement production is one of the world's main sources of carbon dioxide emissions. In addition to saving landfill space, the energy consumption associated with size-reducing glass to a powder form is offset by the energy saved from needing less fuel combustion in the cement manufacturing kilns.

The challenge of this beneficial use is the intensive process of reducing recycled cullet to a proper size and its associated cost. In order to possess pozzolanic properties and not cause alkali-silica reactions in concrete, glass needs to be reduced to at least a No. 325 (45-micron) mesh size, with pozzolanic properties increasing as particle fineness increases.² Assuming that glass is collected separately from all other materials and is relatively clean, in order to achieve a powder size, it would likely have to be processed through a horizontal impact crusher and then a ball mill. The local Angeles Concrete Products Plant could be an ideal option as an end market user for glass powder pozzolan sourced from residential collection.

2.1.3 Wine Industry and Other Bottle Glass

One unique industry to target for glass diversion and reuse is the wine industry. Approximately 300 million cases of wine are sold in the United States every year, and the wine bottles from approximately 210 million of those cases end up in landfills. Similarly, the U.S. Environmental Protection Agency (EPA) estimates that 70 percent of all wine bottles are not recycled.

It is estimated that 60 percent of a wine's carbon footprint is in the production of its bottles. Reusing wine bottles cuts the carbon footprint of the industry and reduces the amount of glass that ends up in landfills. Similarly, the process of washing a wine bottle for reuse generates less than 5 percent of the carbon created in the virgin production of that same bottle.³

Recently, the Cowhorn Winery in Applegate Valley, Oregon, partnered with Wine Bottle Renew to establish a new bioregional program called The RINSE Project. The project cuts per-bottle costs and reduces a winery's carbon footprint by recycling used wine bottles to prepare them for industry reuse. In addition to cleaning, packing, and shipping wine bottles for winery reuse, The RINSE Project culls bottles that have a clouding of the glass, otherwise known as a "bloom,"

² Sheeley, April. Fall 2020. "Developing a Collaborative Plan for Recycling Glass in Kittitas County: Results from a Fall 2020 Internship with CWU Sustainability," fall intern.pdf (cwu.edu) (accessed March 2021).

that can cause wine to spoil. The Green Glass Company then upcycles the rejected bottles into heirloom glassware.

Locally in Washington State, after Waste Management phased out curbside glass recycling in Leavenworth due to an unreliable market, a nonprofit association called Waste Loop partnered with local participants in an effort towards diverting glass from the Leavenworth waste stream. As part of this effort, the group acquired a glass crusher, donated by Sleeping Lady Mountain Resort, and started a pilot program with bottlers Eagle Creek Winery and Honey Jun Kombucha, to turn their disused bottles into cullet. The group would like the cullet to be used as fill material and to partner with the Washington State Department of Transportation to use it along roadways. The group also collected residential glass through local drop-off events.³

The Washington Winegrowers organization could be targeted to implement similar wine-bottle recycling and reuse programs throughout the state. Similarly, Washington State's Vinewise® and Winerywise™ are an online guide to sustainable wine grape growing, winemaking, and business practices. This platform has been developed by a committee of leading Washington State growers and vintners, supported by the work of Washington State University extension staff and researchers, to promote sustainable well-being.⁴ The sustainable reuse of wine bottles would likely fit well within their initiative.

2.1.4 Curbside Collection of Glass

Glass is a problematic material in recycling collection programs due to its abrasive nature on Materials Recovery Facility (MRF) equipment, which shortens its life span, and because it is generally a poorly valued commodity in terms of market pricing. Often, MRFs must pay to dispose of their mixed-colored, broken, recycled glass cullet.

In 2022, the Regional Solid Waste Export and Transfer System facilities discontinued the collection of glass. The City, through its contract with Murrey's Disposal, continues to collect glass through two established drop-box sites.

The City could consider working with Murrey's Disposal to initiate a pilot project on designated collection routes to collect source-separated glass on a bi-weekly or monthly basis for a 6-month period to determine residents' interest in the program and participation levels expected—that would provide information needed for the City to assess potential program implementation costs.

Thurston County has implemented source-separated curbside glass collection through implementation of County ordinance 13696 related to minimum service levels for residential recycling collection. Glass is segregated from other recyclable materials and collected at the curb once per month on a fourth-week schedule on the same day all other recyclables are collected.

³ Robbins, Jefferson. December 2019. "Closing the 'glass gap' in Leavenworth's recycling options." [Closing the 'glass gap' in Leavenworth's recycling options - NCWLIFE](#) (accessed March 2021).

⁴ Vinewise® and Winerywise™. "About." [About \(sustainablewineandgrape.org\)](#) (accessed March 2021).

2.2 Mattress Recycling

While mattresses represent a small portion of the waste stream, they can be problematic due to their bulk and size. Currently, mattresses are disposed of as MSW in Clallam County.

The Mattress Recycling Council (MRC) is a non-profit organization formed by the mattress industry to support statewide mattress recycling programs in states that have enacted mattress recycling laws (currently California, Connecticut, and Rhode Island). According to MRC, more than 50,000 mattresses end up in U.S. landfills each day, even though more than 80 percent of a used mattress's components can be recycled.⁵ Recycling more mattresses would keep these difficult-to-manage, bulky materials from disposal and reduce greenhouse gas emissions through the recycling of metal springs, conversion of polyurethane foam into carpet padding, and shredding of the wood frames for use as biomass.

Northwest Furniture Bank in Tacoma provides a mattress recycling option that creates employment opportunities, diverts mattresses from disposal, and provides a revenue stream that funds programs to assist their clients. Additional information can be found on their website: <https://www.nwfurniturebank.org/mattress-recycling>.

The City should advocate to the State to develop an Extended Producer Responsibility (EPR) program that would provide funding for mattress recycling by manufacturers. In the meantime, the City could investigate the feasibility of developing a mattress recycling turn-in program, potentially through a non-profit organization or current vendor in the state. The City would need to identify a partner for recycling collected mattresses.

2.3 Textile Collection and Recycling

The EPA estimates that 17 million tons of textile waste were generated in 2018, with only 14.7 percent recycled.⁶ Based on the estimated national population in 2022,⁷ this equates to approximately 102 pounds of clothing and textile waste generated by the average U.S. citizen annually, with 85 pounds of that going to landfills or combustion facilities.

There are several ways to combat this trend, listed below. Though not currently happening in the City, many municipalities rely on non-profit organizations to collect and process textiles, often through conveniently located drop-off bins in parking lots; however, unmanned and overflowing donation bins can be a challenge for municipalities. Bins can also become a dumping ground for unwanted household goods.

Solutions to textile waste challenges include the following:

- Campaigns that raise public awareness about the value of clothes and encourage people to repair and care for their clothes to make them last longer. Workshops are offered on how to mend and sew clothes.

⁵ Mattress Recycling Council Website. <http://mattressrecyclingcouncil.org> (accessed July 10, 2022).

⁶ EPA. "Advancing Sustainable Materials Management: 2015 Fact Sheet" (accessed December 2018).

⁷ U.S. Census Bureau, Population Division. U.S. Population of 332,870,000 in July 2022.

- Donating reusable clothing for redistribution and depositing un-reusable textiles at drop-off centers (Goodwill in Sequim and Port Angeles).
- Curbside collection of textiles along with other small household goods.
- Collaborative efforts with industry to improve the sustainability of clothing from manufacturing to end of life.
- EPR programs targeting clothing, household linens, and footwear.

As an example, Thurston County has recently contracted with USAgain to provide textile drop-off boxes at their solid waste facilities. The site accepts clothes, shoes, and household textiles in reusable condition. Household textiles include tablecloths, towels, bedding, blankets, bedspreads, and similar items. Clothes, shoes, and textiles must be clean and dry and dropped off in tied bags. A sturdy bag protects the clothes from dirt and simplifies handling.

Another business trend in other areas involves scheduled home pickup of unwanted clothing/textiles, shoes, and electronics. Fees charged usually include a base fee for doorstep pickup plus additional fees for certain goods (e.g., electronics), depending upon location.

2.4 Fix-It Repair Clinics

Fix-it or repair clinics can help reduce quantities of waste by refurbishing or repairing items that would otherwise be thrown out. Many people lack the knowledge to make small repairs to items such as clothing, small household items, bikes, and other goods that would allow them to continue to be used. Repair clinics can be hosted by a municipal entity, a local non-profit or community business, or some combination of public and private entities.

The City could consider working with various organizations to offer repair clinics, referred to in the CSWMP as “Fix-it Fairs.” These are typically attended by volunteers with skills to share, gained either professionally or through hobbies. Depending on the suite of skills offered by volunteers, items such as household electronics, clothes, jewelry, bikes, and small household items could be repaired while knowledge could be passed along to others at the same time. Usually, items are restricted to those that are small enough to carry or fit through the door. These events can be held at permanent locations on a scheduled date or can be held at other venues such as farmers’ markets or other community hubs. Clinics are usually free to the public, although providers may encourage donations or solicit sponsorships.

Repair clinics can be specific to certain items such as bikes or clothing. Campaigns can raise public awareness about the value of these types of items and encourage people to repair and care for them to make them last longer.

2.5 Support Re-Use Events

The City could consider supporting reuse events, (a recommendation of the CSWMP), that allow residents to obtain gently used materials for reuse (e.g., furniture, toys) in a convenient yet structured way so that the events do not contribute to uncleanliness, litter, or illegal dumping. The events could include garage sales, curbside giveaway events in common areas (for multi-

residential buildings) or at curbside (for single-family households), swap events (e.g., mom-to-mom sales, jewelry or clothing exchanges). Many municipalities promote once- or twice-yearly curbside events, generally held in the spring or fall.

These events create reuse opportunities and therefore reduce the amount of waste sent for recycling or disposal and increase the diversion of materials that could have otherwise ended up in a landfill. They provide an opportunity for residents to access used goods at either reduced rates or for free instead of buying new. There is potential for prohibited or unacceptable materials to be set out, which may pose health and safety concerns (e.g., mattresses containing bed bugs, child car seats, helmets) and for residents not removing leftover materials after the event, which can create litter and an uncleanly neighborhood.

2.6 Funding

Funding for Waste Diversion and Recyclables Management practices and initiatives can be accomplished through use of the Washington State Department of Ecology (Ecology) Local Solid Waste Financial Assistance Program (LSWFA), which provides funding to Clallam County entities for solid and hazardous waste planning and implementation projects. The next open application period for funding will occur in spring 2023. For the 2021–2023 Biennium, Clallam County received \$289,952 in funding with a required match of 25 percent. Additional information on LSWFA funding is available on the following website:

<https://apps.ecology.wa.gov/publications/documents/2107016.pdf>.

Section 6 Summary of Options and Next Steps provides additional information on implementation for waste diversion and recyclables management.

Section 3 Organics Management

The term “organics” refers to yard waste and food waste. The following section presents organics management practices and initiatives that could be implemented for future materials management and infrastructure needs.

3.1 Overview

Effective January 1, 2017, the Washington State Department of Agriculture amended Washington Administrative Code 16-470 by adding MSW, yard debris, organic feedstocks, organic materials, and agricultural waste to the list of commodities regulated under the Apple Maggot Quarantine. Based on this rule change, Clallam County fell into quarantine areas that require special permits for transportation and disposition of yard debris and organics outside of County boundaries into non-quarantine areas.

In April 2019, the Washington State Legislature passed the Food Waste Reduction Act, which requires Ecology to author a food waste prevention plan and annually measure progress towards food waste reduction goals. The region will need to consider productive uses of inedible food materials and whether composting will meet the goals and objectives outlined in Ecology’s Use Food Well plan, published August 2021. Additional information can be found at the following website: <https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Waste-reduction-programs/Organic-materials/Food-waste-prevention/Use-Food-Well-Washington-Plan>.

In 2022, Washington’s Legislature passed House Bill 1799 (HB 1799) requiring diversion of organic materials away from landfill disposal and towards food rescue programs and organics management facilities. Each city or county with a population greater than 25,000 must develop a compost procurement ordinance, and new or updated comprehensive plans and comprehensive solid waste management plans must include identification of possible locations for organic materials management facilities.

This new organics management law requires state and local governments, businesses, and other organizations to reduce the amount of organic materials disposed of in landfills and increase the demand for processed organic materials such as compost. The legislation also calls for an increase in edible food recovery and amends many laws affecting organics management.

By January 1, 2023, cities and counties must adopt compost procurement ordinances. This section applies to a city or county with a population greater than 25,000 (which includes Clallam County as well as City of Port Angeles), as measured by Washington’s Office of Financial Management, and to each city or county in which organic material collection services are provided under RCW 70A.205.

Beginning December 31, 2024, jurisdictions must report to Ecology the total tons of organic matter they diverted from the landfill, including the amount of compost purchased from specific sources.

After July 1, 2024, new and updated local comprehensive solid waste management plans must address the new requirement to provide organic materials collection and management to residential and nonresidential customers. This includes identifying priority areas to locate new organic management facilities.

3.2 Current Organics Management Practice

Currently, yard waste collected within the City by Murrey's Disposal is taken to the City of Port Angeles Composting Facility as part of the Regional Solid Waste Export and Transfer System facilities as outlined in the ILA. Yard waste under the contract is defined as "Leaves, grass, and clippings of woody and fleshy plants up to 3 inches in diameter and 3 feet in length."

Food waste is not currently collected in the City, but such collection could be considered a "pilot project," which allows the City and Murrey's Disposal to engage in the activity, without amending their contract (cost to residents to be determined), if the pilot project terminates within 2 years of initiation. After 2 years, the contract would be amended to the terms agreed upon during the pilot project.

3.3 Organics Management Infrastructure Options

Currently, there are no organized collection or self-haul/management options for food waste in the City; all yard waste collected within the City is by Murrey's Disposal and is taken to the City of Port Angeles composting facility. If that arrangement is discontinued, the City could consider establishing infrastructure for composting either exclusively for the City or in cooperation with regional partners.

3.3.1 Aerobic Composting

Aerobic composting has been successfully employed on source-separated organics, yard/agricultural wastes, and wastewater biosolids. Aerobic composting can include a number of different processes; however, the two most common are aerobic windrow composting and forced aerated static pile (ASP) composting. Windrow-style composting is usually conducted outdoors, while forced ASP composting is usually employed indoors. However, some forced ASP composting is conducted outdoors in areas that are isolated from odor receptors. Other outdoor operations use an aerated bag system to contain the materials.

In windrow composting, the materials (generally green material such as grass, leaves, and yard trimmings) are placed in elongated piles called windrows that are aerated naturally through a "chimney effect" or by mechanically turning the piles with a machine or forced aeration to improve porosity. Frequent turning of the pile introduces oxygen, accelerates physical degradation of feedstocks, and provides an opportunity to adjust the moisture content to the optimum level. This technology can be particularly odorous if food waste is included in the feedstock. The average time required for active composting through windrows is at least 8 to 12 weeks.

The aerated composting process refers to any number of systems used to biodegrade organic material without physical manipulation during primary composting. It may be in windrows, open

or covered, or in closed containers (in-vessel). In forced ASP composting technology, fresh air is forced into the pile to speed up the process and to try to ensure that the system remains aerobic. This method is suited to producing large volumes of compost quickly in relatively small areas. This technology can be particularly odorous if the composting pile is allowed to have pockets of anaerobic activity. The blended feedstock mixture is usually placed on perforated piping or trenches, providing air circulation for controlled aeration.

In-vessel food waste aerobic composting can also take place in highly controlled, automated equipment using a combination of agitation and temperature/moisture control to convert food scraps into compost in just a few days. Current models on the market have modest capacity, with larger units being able to process up to 1.5 tons per day. This technology is most efficient for use with small food waste generators such as schools, hotels/conference centers, malls/food courts, cruise ships, hospitals, amusement parks, and sports stadiums.

As an example, Kittitas County currently operates a yard waste composting facility at the Ellensburg Transfer Station and has established markets for composted material. Figure 3-1 provides an illustration of windrow composting in Kittitas County.



Figure 3-1. Kittitas County Windrow Composting Operation

3.3.2 Anaerobic Digestion

Anaerobic digestion (AD) is commonly used to treat wastewater biosolids; however, it has also been used to treat the organic fraction of the MSW waste stream, such as food wastes.

According to Zero Waste Washington,⁸

Most of Washington's currently operating anaerobic digesters (33) are located at wastewater treatment plants and manage solids from the sewage, generating biogas. Volumes of organic material anaerobically digested in Washington increased during the period 2009-2012 and have varied between 30,510 and 44,467 tons a year through 2017, according to Ecology. All farm-based anaerobic digesters are in dairy-intensive areas (Skagit, Whatcom, and Yakima counties) and began operations in 2012 or earlier.

The AD process occurs when organic matter is decomposed using bacteria in the absence of oxygen. By consuming the organic materials, the bacteria produce a biogas (primarily methane and carbon dioxide). Feedstocks for AD vary according to the type of technology, but in broad terms could include MSW-derived organics, manure, food waste, grass clippings, and—for some technologies include —yard waste, brush, and wastewater treatment plant biosolids. Biologically inert materials that might be contained in the digestion feedstock, such as metals, glass, and plastics, are undesirable and considered contamination; they must either be removed prior to digestion (for wet-type systems) or be screened out during or after digestion (for dry-type systems). Odors can be a significant issue for AD systems, particularly when food waste is incorporated and even more so if a mixed MSW processing system is incorporated before the AD process.

There are several factors that influence the design and performance of AD systems. Some of these factors include the concentration and composition of nutrients in the feedstock, temperature of the digesting mass, retention time of the material in the reactor, pH, acid concentration, and oxygen level. As described by Zero Waste Washington,⁹

Two of the largest wastewater treatment plant digesters are located in King county: West Point and South Plant. These two plants account for nearly half of the county's Wastewater Treatment Division energy use (around 400,000 MMBtu) (King County Wastewater Services, 2020). Other notable examples are the Chambers Creek Regional Wastewater Treatment Plant in Tacoma and LOTT in Olympia (Newcomb, 2016; WSDA, 2011). Nine other anaerobic digesters (Figure 16) are farm-based and digest manure and slurries from dairy operations as their primary feedstock (most co-digest food processing waste) (ABC, 2020).

The Drake Water Reclamation Facility in the City of Fort Collins, Colorado, currently utilizes AD to convert volatile organic solids from wastewater into biogas used to heat the facility. A multi-year pilot project experimented with introducing source-separated organics directly into its

⁸ Zero Waste Washington. 2021. Improving Organic Materials Management in Washington State: An Assessment of the Barriers and Needs of Organic Waste Management Facilities in Washington State, p. 39. <https://zerowastewashington.org/publications/#ReportsStudies>.

⁹ Zero Waste Washington. 2021. Improving Organic Materials Management in Washington State: An Assessment of the Barriers and Needs of Organic Waste Management Facilities in Washington State, p. 40. <https://zerowastewashington.org/publications/#ReportsStudies>.

biodigesters to increase biogas output. The facility has designed and partially funded a cogeneration system that will allow the conversion of biogas into electricity—dependent upon increased throughput of food scraps as feedstock. There are other municipal wastewater treatment plants in the country that may be resources for the development of similar AD facilities that convert diverted food waste organics to energy.

HB 1799 recommends expanding anaerobic digestion at water resource reclamation facilities, compost facilities, and farms.

3.3.3 City Water Reclamation Facility

The City currently owns and operates the Water Reclamation Facility, located at 247 Schmuck Road. The City owns two parcels at the site totaling 7.78 acres in size. The facility currently produces Class A biosolids, which are processed and utilized by a local farmer for land application. Figure 3-2 presents the site layout for the current Water Reclamation Facility.



Figure 3-2. City of Sequim Water Reclamation Facility

The City could consider development of capacity for recycling of organics, either City-specific or for the region, if the City of Port Angeles composting facility were to discontinue composting of curbside collected yard waste or if implementation of HB 1799 requires additional facility capacity in the region. HB 1799 recommends expanding AD at water resource reclamation facilities, compost facilities, and farms. The City could also consider agreements with the City of Port Angeles for composting if desired.

3.4 Funding

Funding for organics management practices and initiatives would need to be determined depending on the option the City selects for potential implementation. Projects of this nature would be eligible for the Washington State Public Works Trust Fund application process for

infrastructure construction and pre-construction low-interest loans. More information can be obtained from their website at: [Public Works Board - Public Works Financing \(wa.gov\)](https://www.wa.gov/public-works-board).

Section 6 Summary of Options and Next Steps provides additional information on implementation for organics management.

Section 4 Materials Management Infrastructure

This section provides potential materials management infrastructure that could be considered for implementation to handle solid waste and recyclables in the City (within the limits of the current ILA and hauler contract). However, infrastructure projects would benefit from regional coordination with entities in Clallam and potentially adjacent counties for sustainability and financial feasibility.

4.1 Clean Materials Recovery Facility

Currently, City curbside recyclables are collected under contract with Murrey's Disposal. The initial term of the contract with Murrey's Disposal expires on January 1, 2030, and may be extended for an additional term, not to exceed 5 years. During the term of the contract, Murrey's Disposal has exclusive rights to materials collected within the City limits, including recyclable materials. Murrey's Disposal currently collects commingled curbside recyclables from both residential and commercial customers upon request and processes them for shipment to markets at their baling facility. Additional information on the Murrey's Disposal contract can be found in Section 1.2.2.

In preparation for the expiration of the Murrey's Disposal contract, the City might choose to explore the siting and operations of a clean MRF, which processes source-separated recyclables, no longer mixed with MSW, so they are not disposed of in area landfills and can be shipped to other facilities as commodities. For planning purposes, this section includes information on a single-stream MRF-type facility similar to the existing MRF owned by Larimer County, Colorado, and currently operated by Waste Management of Colorado and a smaller version of a MRF operated by Douglas County in Washington. Single-stream sourced materials are assumed to be "clean" by virtue of segregation from MSW. This allows single-stream/clean MRFs to have relatively high recovery rates and low residue/contamination rates. Typically, materials managed at a MRF include various types and grades of containers and paper products (fiber), the most common of which include:

- Aluminum (used beverage cans)
- Steel cans (tin cans typically used for canned foods)
- Scrap metal (mixed types of non-container metal)
- Plastic containers
- Glass containers
- Newspaper or old newspaper
- Cardboard or old, corrugated cardboard (OCC)
- Mixed paper (MP)

There are several types of clean MRFs, the most common of which include dual-stream and single-stream MRFs. A dual-stream MRF receives containers separately from paper or fiber

materials because the collection system uses two bins for recyclables and sorts the containers and fiber materials on two separate processing lines. Single-stream recycling collects all the recyclable materials in a single bin or container, and the MRF equipment must separate the containers from the fiber materials and then into the designated commodities. For this discussion, a single-stream MRF, the most common type of MRF, is assumed. It should be noted that the principles, costs, and impacts are similar for a dual-stream MRF, with a few exceptions.

MRF technology is constantly changing with new approaches that better separate and process the mixed stream into commodities. MRFs have moved away from a simple conveyor with sorters on both sides to screening devices that separate materials by their varying properties. Optical sorters in use today, when properly arranged, are more efficient than manual sorters but still require quality control measures. Robotic sorting is beginning to be applied and, while faster than manual sorting at identifying target materials, still needs some development before it will be more common on process lines. At the same time, the material mix and characteristics of the various fiber and container materials are constantly changing as well. These factors, plus changes in markets and local needs, all add up to the need for steady facility updates on a periodic basis. Few MRFs operate for more than about 5 to 10 years without major changes and equipment updates.

A clean MRF can be sized to meet the needs of the City's curbside materials only. As an example, Douglas County, Washington, has an established rural drop-off recycling program utilizing collection trailers. These sites are serviced by the Solid Waste Programs Office, and collected recyclables are processed at the Douglas County Processing and Recycling Center (see Figure 4-1). Collected recyclables, approximately 50 tons per year, are sorted, processed, and stored until a sufficient quantity is available for transportation to market. The designated recyclables collected at the drop-off sites are determined by their current market values. Douglas County accepts the following commodities for processing and marketing:

- Source-separated newspaper
- Phonebooks
- Magazines/Catalogs
- Corrugated cardboard
- Mixed residential paper
- Steel/Tin cans
- Aluminum cans
- PET #1 – Soft drink bottles, sport drinks – clear plastic beverage containers
- HDPE #2 – Milk jugs, juice jugs – clear or opaque plastic beverage containers



Figure 4-1. Douglas County Baler

As a regional approach, the City could consider partnering with Clallam County, Jefferson County, and the City of Port Angeles for the siting of a larger clean MRF to process recyclable commodities.

Another example, Larimer County, Colorado, currently owns and contract operates a recycling center for all recyclables collected in the County (see Figure 4-2). Larimer County currently accepts the following recyclable commodities:

- Office paper
- Newspaper
- Corrugated cardboard
- Paperboard and low-grade paper
- Glass bottles and jars
- Aluminum
- Tin



Figure 4-2. Larimer County MRF

Larimer County processes approximately 40,000 tons of materials per year through their MRF and provides pricing for recyclable commodities that is updated monthly and can be found on their website at: <https://www.larimer.org/solidwaste/prices>.

An overview of current markets for recyclable materials including current market pricing is provided in Table 4-1. Market prices for recyclables fluctuate frequently, with the City reviewing markets on an annual basis as part of the discussions with Murrey's Disposal that are expected every August according to the contract.

Table 4-1. Markets for Recyclable Materials (as of June 2022)

Material	Primary Market(s)	Current Market Pricing ¹	Comments
Paper			
Cardboard	Regional paper markets, paper mills and export	\$105.00/ short ton	The markets for cardboard (used in packaging) have recently been stabilizing.
Mixed Waste Paper and Newspaper	Regional paper markets, paper mills and export	\$42.50/ short ton	The markets were fluctuating due to supply and demand from overseas markets and processors but are now stabilizing.
Plastics			
Bottles #1 through #2	Regional markets in Western Washington, Oregon, and export	\$0.23-\$0.50/ lb.	The markets for PET and HDPE bottles are currently improving.
Bottles #3 through #7	Regional markets in Western Washington, Oregon, and export	\$0.02/ lb.	The markets for plastic #3 through #7 are low but stable.
Other Plastics	Primarily export	-\$0.005/ lb.	Prices for other plastics are low or negative (i.e., the plastics are recycled for a charge).
Metals			
Aluminum	Regional markets in Western Washington and Oregon; can manufacturing in St. Louis	\$82.50/ ton	Aluminum prices are currently weak but stabilizing.
Tin cans, appliances, and ferrous and non-ferrous scrap	Regional markets in Western Washington and Oregon	\$205.00/ ton	Steel has fluctuated, and the market is currently weak.
Glass			
Clear Glass	Regional markets in Western Washington and Oregon	\$30.00/ ton	Prices are stable for clear glass.
Brown Glass	Regional markets in Western Washington and Oregon	\$20.00/ ton	Prices are stable for brown glass.
Green Glass	Regional markets in Western Washington and Oregon	\$10.00/ ton	Prices are stable for green glass.

¹Current market pricing from recyclemarkets.net as of June 2022. Assumptions assume recyclables are sorted, baled, and picked up from facility. Market prices are variable and can be monitored on a monthly basis for stability.

4.2 Construction and Demolition Debris Handling Facility

Despite the potential for re-use, much C&D debris is currently disposed of as solid waste through the Regional Solid Waste Export and Transfer System. Processing of C&D materials

varies according to the type of materials available in the waste stream and the new materials that can be developed from the process. C&D processing facilities are most commonly located in areas where there are high disposal fees or high landfill diversion requirements. In addition, a number of construction businesses operating in the City may already be recycling C&D materials as markets are available.

C&D debris is generated when new and existing buildings are renovated or demolished and when highway and street projects occur. Commonly recovered C&D materials include concrete, wood, bricks, shingles, drywall, cardboard, and metals. With a current tipping fee of \$193.98 per ton at the transfer station, it might be advantageous to consider segregation and processing of the potentially recovered materials described in the sections below.

Concrete

A significant volume of concrete is generated during the early phases of construction projects. Recycling concrete is beneficial because it is diverted from disposal and used to replace virgin materials such as gravel. Concrete is crushed to reduce the particle size and then screened to remove oversized pieces. This material is mixed with clean concrete to create a valuable product.

Wood

Wood products are used extensively for building construction and outdoor structural applications (fences, decks, utility poles) in the United States. Wood products enter the C&D stream as scrap both from new construction and from the demolition of in-service wood structures. Depending on the application, some wood products may be treated with chemicals to delay biological decay. Wood in the C&D stream is generally commingled with other building components and must be separated using manual and mechanical techniques. Source-segregated wood from construction projects or wood product manufacturing plants may be processed at facilities that process solely wood. The wood is typically ground for the majority of its current common end uses. The ground material then may be passed through a screen to remove wood fines. The remains from the screen are conveyed under a magnet to extract any ferrous materials such as screws, hinges, and nails. Larger wood chips can be used as boiler fuel, and the clean lumber (non-treated) is often used to produce mulch. Contamination from pressure-treated wood, painted wood, and particle board and plywood (glue) is a concern.

Shingles

Asphalt shingles consist of an asphalt-impregnated mat, the bottom of which is coated with a fine mineral surface and the top of which is coated with a colored, coarser mineral fraction. Re-roofing projects produce a relatively large amount of uniform material over a short time. Asphalt shingles constitute a large fraction of the roofing loads. Re-roofing projects are associated with wastes that are considered contamination of the asphalt shingles, which reduces the quality and market for these materials. On-site separation for re-roofing projects would be preferred to promote recycling. During shingle recycling, shingles are sorted, cleaned, and then processed into dry granular asphalt pieces that can then be used to make hot mix asphalt (HMA).

Drywall

Gypsum drywall (also referred to as wallboard or plaster board) is a major interior wall material in residential and commercial buildings in the United States. Drywall consists of a gypsum core, which constitutes 90 percent of the weight of the drywall product, covered on each side with a paper backing. A relatively large percentage of drywall is wasted during construction compared to other materials, as drywall must be cut to meet the interior wall dimensions and openings of a building. It should be noted that it is easier to find markets to recycle clean drywall scraps (i.e., generated during construction) into new drywall, but there are fewer facilities that will accept drywall recovered through building demolition.

Metals

To recover metals, magnets can be employed for hand separation of materials. Other large ferrous and non-ferrous materials can be removed in standard picking operations. Typical examples include metal framing joists, wiring, conduit, and various hardware.

Old Corrugated Cardboard (OCC)

OCC is another material that can come from many construction projects. This material can be separated using processing equipment at a MRF, or it can be separated by hand, baled, and sold into the market to be made into new cardboard products, compost, or roofing felt. OCC has potential end markets locally at the Port Townsend Paper Mill and McKinley Mill in Port Angeles.

The 2021 Clallam County CSWMP recommends to “Promote reuse of construction materials.” C&D materials segregation and recycling could be implemented as part of the Regional Solid Waste Export and Transfer System, or the City could implement selected recycling of C&D materials within the City limits and designate an area for this operation to occur. The City could also implement ordinance(s) for new construction and demolition projects to require certain levels of recovery by the contractors. As an example, King County has banned the disposal of certain C&D materials. Additional information can be found at:

<https://kingcounty.gov/depts/dnrp/solid-waste/programs/green-building/construction-demolition.aspx>.

4.3 Resource Recovery Park

Resource recovery parks, also known as Eco Parks, involve the co-location of reuse, recycling, compost processing, manufacturing, and retail businesses in a central facility and/or campus and have the ability to be sized to fit the needs of any community. These parks allow integration between producers and consumers by supporting some infrastructure demands (e.g., energy demands) and material supply for both groups. Introducing reuse and drop-off centers, MRFs, C&D materials recycling facilities, and energy recovery facilities to the same location brings more efficient and effective opportunities for materials and energy exchange. Communities have also integrated large recycling facilities that include drop-off centers for reusable materials, a center to purchase used items, and a center for items to be repaired all under one roof. Several communities across the United States have developed resource recovery parks in places such

as Berkeley and Monterey, California, and Kent County, Michigan. These examples are further described below.

4.3.1 Examples of Recovery Parks

Urban Ore Eco Park, Berkeley, California

The Urban Ore Eco Park (Eco Park) is located on 3 acres of land and acts as a mall for the resale and repair of used items. This facility is split into two departments: the General Store and the Building Materials Exchange. The General Store includes cabinets, hardware, lighting, furniture, art and media collections, books, clothes, household goods, and more. The Building Materials Exchange includes doors, windows, tiles and stone, lumber, bathtubs, sinks, and more. All the materials at the Eco Park are reused and have been dropped off by people or salvaged. Most of the materials brought to the Eco Park are salvaged at the Berkeley Transfer Station through a reuse partnership with the City of Berkeley that gives workers at the Eco Park complete salvage rights from the tipping floor. Before 2012, the City of Berkeley paid Urban Ore \$40 per ton for the material salvaged, which was significantly lower than the \$126 per ton the City would pay if it went to a landfill. The revenue payment was eventually removed; however, Urban Ore still salvages materials and makes revenue from the sale of the materials in the store.¹⁰

People may drop off materials for store credit or cash or may purchase materials. Some items that may require substantial skilled labor to repair may be dropped off for a small fee. It is preferred that items dropped off at the Eco Park for reuse require little to no work before being resold. The drop-off area manages a wide range of materials for diversion as listed above for the General Store and Building Materials Exchange. Figure 4-3 shows the layout of the Eco Park.¹¹

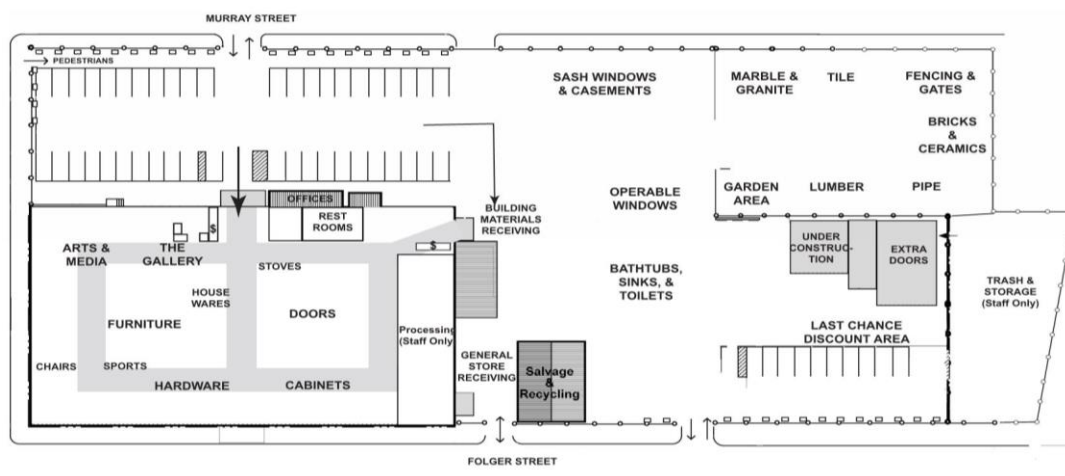


Figure 4-3. Urban Ore Eco Park Layout

¹⁰ EPA. "Zero WASTE Case Study: Berkeley." <https://www.epa.gov/transforming-waste-tool/zero-waste-case-study-berkeley> (accessed January 2019).

¹¹ Urban Ore. "About Us." <http://urbanore.com/about-us/> (accessed January 2019).

MONTEREY, CALIFORNIA

Monterey Regional Waste Management District (MRWMD) operates a landfill, a MRF, a Household Hazardous Waste (HHW) Collection Center, a Landfill Gas to Energy Facility, an Organics to Energy Facility, a Buy Back Center, a Community Franchise Collection Facility, and a Resale Store. This resource recovery park also contains an educational center and a location to meet the MRWMD staff. These facilities are all located in the same area and integrated to recover energy and materials. In total, the land area for this resource recovery park is approximately 610 acres.¹² The full site plan can be seen in Figure 4-4.



Figure 4-4. Site Plan for Monterey Regional Resource Recovery Park

The Monterey Peninsula Landfill spans 461 acres and accepts about 200,000 tons per year. Gas is collected at the landfill and sent to the Landfill Gas to Energy Facility using a series of pipes. The Landfill Gas to Energy Facility uses four engine generators to burn the gas as fuel to create 5 megawatts of renewable electricity, and the methane removed from the landfill is approximately 9,000 tons per year. Excess gas goes to a landfill gas flare that burns the gas to remove methane.

The MRF is owned by MRWMD and processes residential and commercial recyclables, C&D debris, and commercial mixed waste. The floor plan of the public drop-off area for the MRF can be seen in Figure 4-5. The public drop-off area allows for the separation of mattresses and C&D materials.

The Last Chance Mercantile is a reuse store that diverts at least 700 tons of materials from disposal annually. This store receives donated items such as clothes, furniture, books, scrap metal, household paint and products, and electronic waste drop-off. The store also reclaims items directly off the tipping floor. The reuse store generates more than \$800,000 per year in revenue by selling refurbished or used items. This location is not a nonprofit; therefore, residents do not get a tax donation receipt. Residents may also drop materials off at the HHW Collection Facility. Sixty percent of the HHW (e.g., paint) is sent to the Last Chance Mercantile and the rest is sent to the recycling facility for processing. The Monterey Resource Recovery

¹² Monterey Regional Waste Management District Website. <http://www.mrwmd.org/facilities/> (accessed December 2018).

Park also includes a buy-back center for bottles and cans. Residents pay a 5- to 10-cent deposit when purchasing cans or bottles and may redeem their deposits when returning the cans and bottles to redemption/buy-back centers.

MRWMD also owns an Anaerobic Digestion System through a public-private partnership with Zero Waste Energy. The system consists of four steel digester tanks that accept a blend of 70 percent food scraps and 30 percent yard trim. Annually, the digesters process 5,500 tons of materials. In a 21-day period, organisms in the digesters break down the biodegradable materials, creating methane gas and a small amount of carbon dioxide that is cleaned and used to fuel a heat-and-power engine to produce electricity. The electricity is used for the Monterey Regional Water Pollution Control Agency, which neighbors the site.

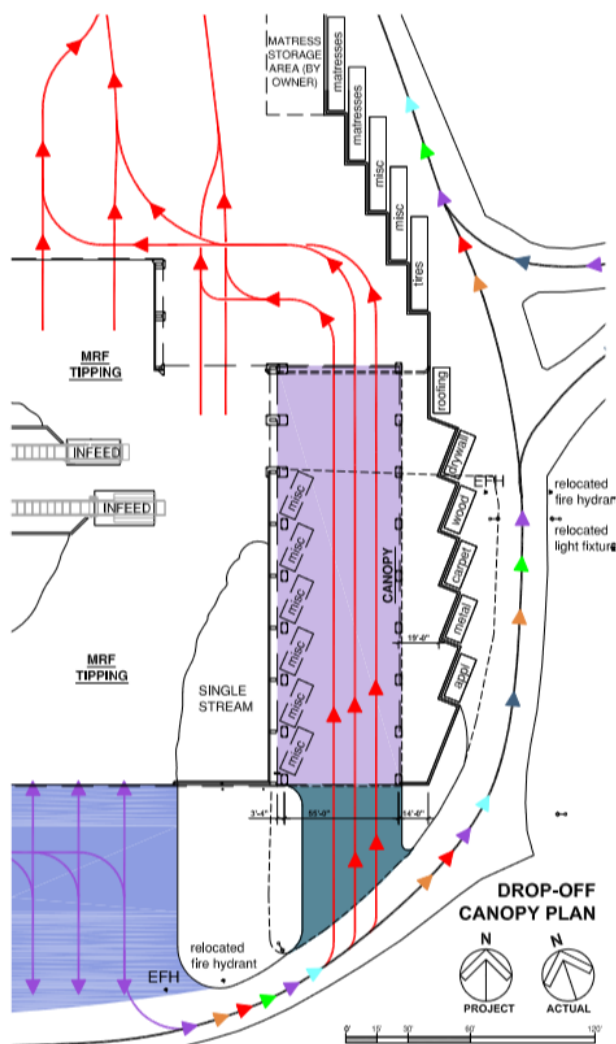


Figure 4-5. Floor Plan for MRWMD MRF External Material Drop-Off Area

KENT COUNTY, MICHIGAN

Kent County, Michigan, completed a Sustainable Business Park Master Plan in 2018 to create a plan to attract sustainable businesses to a County-owned property near their existing landfill. The County issued a Request for Proposals in September 2020 and received nine responses for an anchor tenant facility at the site. In March 2022, the County Board of Public Works approved a Project Development Agreement with Continuus Materials + Anaergia as the anchor tenant for the Sustainable Business Park to provide a proven technology to convert waste landfilled into raw materials for new products. Additional information can be found on the Kent County website: [Sustainable Business Park | ReimagineTrash](#).

4.4 Materials Management Facility/Transfer Station

The ILA for the Regional Solid Waste Export and Transfer System places responsibility for operations of the Port Angeles Transfer Station and the Blue Mountain Transfer Station with the City of Port Angeles during the life of the agreement. The current ILA, which expires in February 2027, has language that allows for a 5-year extension if none of the parties gives notice 18 months prior to the expiration of the original 20-year term. This requires notice to be given by August 2025 or the ILA will extend until February 2032.

The ILA also requires that all solid waste collected within the City be directed to the Regional Solid Waste Export and Transfer System facilities consistent with the 2021 Clallam County CSWMP, which recommends that “Clallam County, Port Angeles, and Sequim must continue to meet their respective commitments as specified in the ILA.”

In 2019, the Regional Solid Waste Export and Transfer System reported that 7,100 tons of solid waste from the City was disposed of through the system. This equates to approximately 13 percent of the total regional tons disposed. Based on this tonnage, initial criteria for siting a transfer station facility would include:

- Site is more than 5 acres in size and is vacant land or has limited buildings.
- Site is located outside of residential zoning, and current zoning allows for a transfer station through a conditional use permit.
- Site is not designated as wetlands or in the 100-year floodplain.
- Endangered and protected flora and fauna habitat are not located on the site.
- Site is not protected for historical, archeological, or cultural significance.

4.4.1 Potential Transfer Station/Materials Management Sites

Based on information provided by City staff, the only currently City-owned parcel that meets the above siting requirements would be the property on which the City Water Reclamation Facility is located (247 Schmuck Road) and would be dependent on future expansion requirements for that facility. This property is 7.78 acres in size. Figure 3-2 provides the current site layout for the Water Reclamation Facility property.

As part of the ILA, the City of Port Angeles operates the Blue Mountain Transfer Station located at 1469 Blue Mountain Road, Port Angeles. The facility currently accepts self-haul waste for disposal and recyclables into drop-boxes that are transported to the Regional Transfer Station for compaction into containers for disposal or recycling. The property, owned by Washington State Department of Natural Resources, is approximately 157 acres but the effective area of the transfer station is about 4 acres in size. Figure 4-6 provides the site layout for the Blue Mountain Transfer Station property.

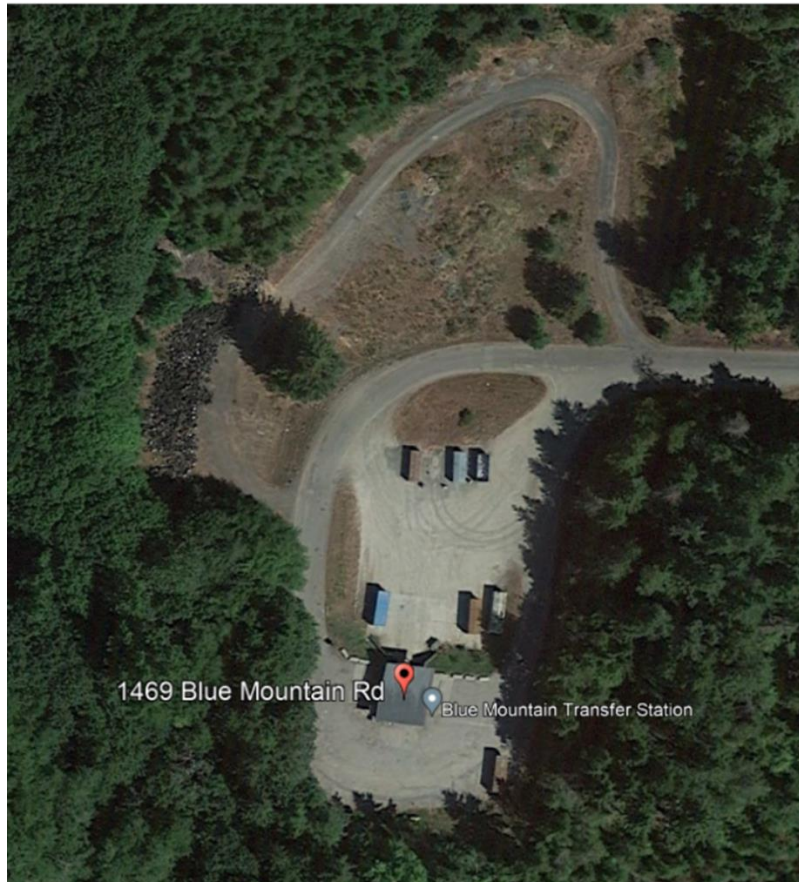


Figure 4-6. Blue Mountain Transfer Station Property

If the City chooses to discontinue the ILA with Clallam County and the City of Port Angeles, the following options could be considered:

- Work cooperatively with Clallam County to construct a transfer station/materials management facility at the Blue Mountain Transfer Station site. This would include negotiating property purchase from the Washington State Department of Natural Resources.
- Conduct a feasibility study and preliminary site layout for a transfer station/materials management facility at the City-owned property where the Water Reclamation Facility is located.
- Consider acquiring property outside the City limits that would be suitable for construction of a City-owned transfer station/materials management facility.

- Require the City-contracted solid waste service provider to provide facilities suitable for a transfer station/materials management facility and contract for transfer, materials management, transport, and disposal.

Table 4-2 provides the benefits and limitations related to a City-owned transfer station/materials management facility.

Table 4-2. City-Owned Transfer Station/Materials Management Facility Overview	
Benefits	Limitations
• Provides the City with the most control and stability for waste recycling and disposal. • Supports City goals and objectives including evolving technologies for future infrastructure options or resource recovery. • Provides increased service quality and flexibility to the rate payers and general public due to City control. • Tip fees are set and maintained by the City, allowing for changes when needed. • Allows the City to provide for special community events. • Allows marketing of materials with revenues to the City. • Provides facility stability as the ILA expires. • Facilities would be available for the next curbside contract, allowing for pricing advantages to the City. • Allows for choice of providers through competition.	• Facilities are expensive to construct and operate. • Site selection would be challenging due to site availability in the City limits. • Volume of waste and recyclable materials generated within the City is small, which could result in increased tipping fees. • Capital costs for construction of facilities, equipment, and ancillary features would impact the City budget and revenues. • Public agency construction and operations require a political process in order to respond to potential financial impacts from regulatory changes, reduced tonnages, or system shutdowns. • Requires a bid process for transport and recycling or disposal of materials. • May require an amendment to the County Solid Waste Management Plan for implementation or the City to prepare its own solid waste management plan. • Requires implementation of additional infrastructure to handle household hazardous waste, organics, and recyclables in addition to solid waste. • Increased City staff is needed to manage contracts and materials.

4.5 Funding

Funding for materials management infrastructure would need to be determined depending on the option the City selects for potential implementation. Projects of this nature would be eligible for the Washington State Public Works Trust Fund application process for infrastructure construction and pre-construction low-interest loans. More information can be obtained from their website at: [Public Works Board - Public Works Financing \(wa.gov\)](https://www.pwb.wa.gov/).

Section 6 Summary of Options and Next Steps provides additional information on implementation for materials management and infrastructure.

Section 5 Education and Outreach Initiatives

This section provides potential education and outreach initiatives that could be considered for implementation to address all types of customer needs in the City.

5.1 Increase Educational Efforts

Educating residents on the importance of waste reduction, reuse, and recycling is one of the key factors to reducing trash and increasing recycling and composting. The 2021 Clallam County CSWMP recommends to “Continue public education efforts and share responsibility for this with the cities, Tribal Councils, and private sector as appropriate.”

In addition, the 2021 Clallam County CSWMP completed a Contamination Reduction and Outreach Plan that recommends coordination of effective outreach programs throughout the County utilizing consistent, clear, and harmonized messaging including direct mailings, website updates, and direct outreach to single-family homes, multi-family homes, and commercial businesses.

City residents and businesses need to be informed as to the proper and available methods for waste reduction, recycling, and disposal. Currently, the City provides information as follows:

- Monthly newsletter enclosed with utility bills to provide periodic messages regarding recycling.
- Information in the Sequim Gazette on a monthly basis.
- Refrigerator magnets to inform City residents on service availability.
- Website with links to regional sources of information.

The current contract with Murrey’s Disposal does not address educational requirements within the City. This oversight allows Murrey’s Disposal to potentially discontinue recycling collection for single-family, multi-family, and commercial businesses if materials are contaminated, with no educational opportunities initiated, no notice to participants required, and no discussion with the City. The City should consider discussing this oversight during the annual review in August. At this time, the City could also discuss education and outreach programs that would be beneficial to residents and how those might be implemented. Such cooperative education and outreach programs could include:

- Support for the development of an application (mobile application or dedicated website) to provide information on City waste management programs as well as opportunities/locations to reuse or recycle materials.
- Conduct a waste and/or recycling audit to monitor the effectiveness of education and outreach, particularly since there are no targeted campaigns currently being implemented.
- Initiate multi-family educational events and visits to educate residents on proper recycling and waste reduction methods.

- Create an educational campaign including brochures, with harmonized messaging, that provide options for recycling at home, school, and work.
- Create a promotional campaign or newsletter to promote waste reduction and recycling in the schools located within the City.
- Provide cooperative enforcement of illegal dumping and open discussions regarding educational campaigns that could be initiated.

The City should also open discussion with Clallam County and the City of Port Angeles to discuss appropriate education and outreach campaigns that could be supported by participants in the ILA and funding for activities as they are initiated.

5.2 Funding

Funding for education and outreach initiatives can be accomplished through the Department of Ecology Local Solid Waste Financial Assistance Program (LSWFA), which provides funding to Clallam County for solid and hazardous waste planning and implementation projects. The next open application period for funding will occur in spring 2023. For the 2021–2023 Biennium, Clallam County received \$289,952 in funding with a required match of 25 percent. Additional information on LSWFA funding is available on the following website:

<https://apps.ecology.wa.gov/publications/documents/2107016.pdf>

Waste Reduction and Recycling Education Grants - Washington State Department of Ecology is a competitive grant program that provides up to \$60,000 to qualified local governments and non-profit organizations for local or statewide education programs designed to help the public with litter control, waste reduction, recycling, and composting. A match of 25 percent of state funding is required.

Future funding sources for education could include an education fee component to future collection and disposal contracts on a per ton basis or as a monthly flat amount paid by the hauler.

Section 6 Summary of Options and Next Steps provides additional information on implementation for education and outreach initiatives.

Section 6 Summary of Options and Next Steps

A summary of options including next steps and implementation costs is presented in Table 6-1 to assist the City as they consider moving forward in the evaluation of options for collection and post-collection of municipal solid waste and recyclables during the 20-year planning horizon. These options include practices and initiatives that could be implemented in the City and with Clallam County, the City of Port Angeles, and the current curbside collection contractor for successful materials management.

Table 6-1. Materials Management Preliminary Action Options

Option	Next Steps	Implementation Cost
Waste Diversion and Recyclables Management		
Specialty glass Pozzolan in portland cement concrete Wine industry glass	- Consider forming a working group consisting of ILA partners to discuss the feasibility of glass options for implementation. - Identify public/private partnership opportunities available for glass recycling and reuse. - Conduct a feasibility study to understand specific processes, regulatory health requirements, and other items for establishment of program selected. - Attract new businesses or investments in the selected glass option. - Locate a suitable site for operations. - Identify end-markets and initiate contracts for sale of materials.	- Staff time \$30,000 - Feasibility Study
Curbside collection of glass	- Consider opening discussions with Murrey's Disposal for a potential pilot project. - Identify City staffing for the project. - Identify end-markets for glass collected. - Secure a pilot project funding source. - Implement as feasible.	- Staff time - Cost dependent on grant funding secured
Mattress recycling	- Advocate for State EPR for mattress recycling. - Consider forming a working group consisting of ILA partners to discuss feasibility of a mattress recycling program. - Research the potential mattress recycling options available. - Consider mattress segregation options. - Consider mattress recycling opportunities that can be implemented at the current transfer station facilities or through the contract with Murrey's Disposal.	Staff time
Textile collection and recycling	- Investigate textile collection and recovery opportunities in the City, including Goodwill at minimum. - Consider initiating a procurement process for establishing textiles collection and recycling within the City if needed. - Allow for program implementation by the selected contractor.	Staff time

Table 6-1. Materials Management Preliminary Action Options

Option	Next Steps	Implementation Cost
Fix-it repair clinic	- Consider a City-sponsored Fix-It Clinic. - Research and determine which organizations would be interested in participating. - Conduct an educational campaign prior to the Fix-It Clinic event. - Conduct Fix-It Clinics as needed and requested.	- Staff time \$5,000 - Educational Campaign
Re-use events	- Support re-use events as opportunities arise. - Provide educational materials if requested.	- Staff time \$5,000 - Educational Campaign
Organics Management		
Aerobic composting Anaerobic digestion	- Consider forming a working group consisting of ILA partners to discuss the feasibility of organics management options for implementation. - Consider how implementation of HB 1799 will impact organics collection and processing in the County and City. - Investigate feasibility of processing food waste as part of organics management options. - Determine the most appropriate technology to be utilized for continued organics composting operations. - Identify a site for a composting operation either as part of the ILA partners or of the City as a stand-alone facility. - Identify a procurement model and initiate the procurement process for development of an organics processing facility. - Identify end-markets for compost and initiate contracts for the sale of materials. - Commence permitting, design, and construction of a facility for organics processing operations. - Consider implementing a solid waste rate impact assessment based on selected infrastructure and implementation requirements.	- Staff time - Property Procurement and Feasibility Study
Materials Management Infrastructure		
Clean materials recovery facility	- Consider discussing future potential for a clean materials recovery facility and options available for City curbside materials with Murrey's Disposal. - Consider forming a regional working group to develop a consistent approach to recyclables processing, taking into account distance and hauling costs. - Explore the siting and operation of a clean materials recovery facility. - Solicit community feedback relating to commingled recyclables and potential disposal bans. - Develop a business case to support a clean materials recovery facility. - Identify potential public/private partnership opportunities available for recyclables processing.	- Staff time \$35,000 - Business Case \$35,000 - Feasibility Study

Table 6-1. Materials Management Preliminary Action Options

Option	Next Steps	Implementation Cost
	- Conduct a feasibility study to understand the specific processes and equipment needs and the costs to construct a clean materials recovery facility. - If feasible, identify a procurement model and initiate the procurement process for development of a clean materials recovery facility. - Conduct a siting study to locate a suitable area for the facility. - Identify end-markets for materials and initiate contacts for the sale of materials. - Consider implementing a solid waste rate impact assessment based on selected infrastructure and implementation requirements.	
Construction and demolition debris handling facility	- Consider forming a working group consisting of ILA partners to discuss the future of the ILA and facility options for C&D materials management. - Proceed with options for facility siting dependent on discussion with ILA partners. - Consider implementing a solid waste rate impact assessment based on selected infrastructure and implementation requirements.	Staff time
Resource recovery park	- Review available space and/or buildings available in the City that could support development of a resource recovery park. - Develop a facilities plan that identifies an approach to secure infrastructure. - Undertake a business case for development of a resource recovery park. - Identify public/private partnership opportunities available for resource recovery park development. - Consider implementing a solid waste rate impact assessment based on selected infrastructure and implementation requirements.	- Staff time. \$5,000 - Facilities Plan \$40,000 - Business Case
Transfer station/materials management facility	- Consider forming a working group consisting of ILA partners to discuss the future of the ILA and facility options for materials management and/or a transfer station. - Proceed with options for facility siting dependent on discussion with ILA partners. - Consider implementing a solid waste rate impact assessment based on selected infrastructure and implementation requirements.	Staff time
Education and Outreach		
Increased education and outreach	- Discuss options for education and outreach programs with Murrey's Disposal. - Consider forming a working group consisting of ILA partners to discuss harmonized education and outreach campaigns. - Implement selected education and outreach programs.	- Staff time - Funding from LSWFA Grant and possible future collection contract component

Table 6-2 provides a comparison matrix of the options outlined in Table 6-1.



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Table 6-2. Materials Management Preliminary Action Options Implementation Matrix

Option	Implementation Considerations			Potential Funding Source	End Markets Needed	Additional Considerations	Implementation Requirements							Implementation Cost Level (High, Medium, Low) ¹	
	ILA Working Group	HB 1799 Impacts	Murrey's Disposal				Staff Time	Feasibility Study	Business Case	Facilities Plan	Educational Efforts	Site/ Site Study	Property Procurement		
Waste Diversion and Recyclables Management															
Specialty glass Pozzolan in portland cement concrete Wine industry glass	✓			- PPP - Business investments	✓		✓	✓					✓		Medium
Curbside collection of glass			✓	Grants	✓	Potential pilot project	✓					✓			Medium
Mattress recycling	✓		✓	- City funding - Grants	✓	Educational materials	✓					✓		✓	Medium
Textile collection and recycling				- City funding - Grants	✓	Educational materials	✓					✓			Low
Fix-it repair clinic				- City funding - Grants			✓					✓			Low
Re-use events				- City funding - Grants		Educational materials	✓					✓			Low
Organics Management															
Aerobic composting Anaerobic digestion	✓	✓		To Be Determined	✓	- Permitting, design, and construction of organics processing facility - Possible solid waste rate impact assessment	✓	✓					✓	✓	High
Materials Management Infrastructure															
Clean materials recovery facility	✓		✓	To Be Determined	✓	- Regional working group - Permitting, design, and construction of facility - Possible solid waste rate	✓	✓	✓				✓	✓	High

Table 6-2. Materials Management Preliminary Action Options Implementation Matrix

Option	Implementation Considerations			Potential Funding Source	End Markets Needed	Additional Considerations	Implementation Requirements							Implementation Cost Level (High, Medium, Low) ¹
	ILA Working Group	HB 1799 Impacts	Murrey's Disposal				Staff Time	Feasibility Study	Business Case	Facilities Plan	Educational Efforts	Site/ Site Study	Property Procurement	
						impact assessment								
C&D debris handling facility	✓			• To Be Determined	✓	• Permitting, design, and construction of facility • Possible solid waste rate impact assessment	✓					✓		High
Resource recovery park				• PPP		• Permitting, design, and construction of recovery park • Possible solid waste rate impact assessment	✓		✓	✓				High
Transfer station/materials management facility	✓			• To Be Determined		• Permitting, design, and construction of facility • Possible solid waste rate impact assessment	✓					✓		High
Education and Outreach														
Increased education and outreach	✓		✓	• LSWFA Grant • Possible future collection contract component			✓				✓			Medium

Note: PPP = public-private partnership

¹ All cost levels are strictly baseline estimates and would require additional research for actual determination.